

Figure 2.1

Supervised learning is often viewed as function approximation problem. Given a set $\{(\mathbf{x}_i, t_i)\}$, $i = 1 \dots M$, of training pairs with inputs \mathbf{x}_i and target outputs t_i , the goal is to find a function that captures the input-output relationships illustrated in the training examples, $f(\mathbf{x}_i) \approx t_i$. If the search is successful, the new function can then be used to estimate the correct output for new points not in the original training set. Ideally, the functional form may also be more compact and faster to evaluate.

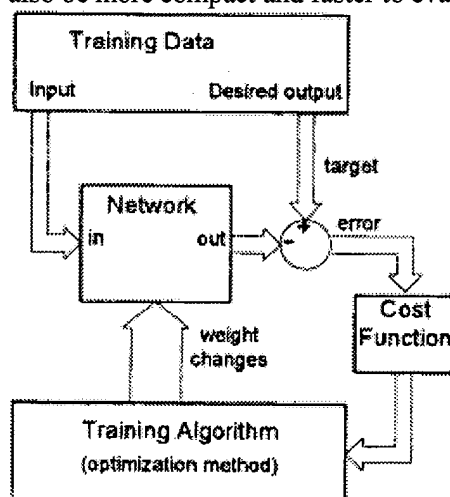


Figure 2.2

Supervised learning model. In supervised learning, a desired output is specified for every pattern encountered during training. Differences between the network output and training target are treated as errors to be minimized by the training algorithm.